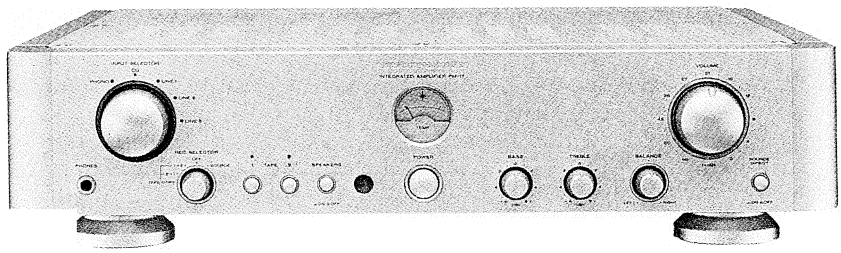
Service Manual

74 PM17 /01G/02G

PM-17F N

Integrated amplifier



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Please use this service manual with referring to the user guide (D.F.U.) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

model PM-17

4822 725 51138
First issue : 1997. 07
269J855010 AO

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following infomation must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC.
440 MEDINAH ROAD
ROSELLE, ILLINOIS 60172- 2330
USA
PHONE : 630 - 307 - 3100
FAX : 630 - 307 - 2687

CANADA

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PHONE : 416-831-6333
FAX : 416-831-6936

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PROFESSIONAL **USA**

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1000 CORPORATE BLVD., SUITE D
AURORA, ILLINOIS 60504 USA
PHONE : 630 - 820 - 4800
FAX : 630 - 820 - 8103

PROFESSIONAL **CANADA**

TC ELECTRONICS CANADA LTD
540 FIRING AVE.
BAIE D'URFÉ, QUEBEC H9X 3T2
CANADA
PHONE : 514 - 457 - 4044
FAX : 514 - 457 - 5524

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MARANTZ EUROPE B,V,
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MARANTZ BRAZIL
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FAX : +55 11 534. 8988

THAILAND

MRZ STANDARD CO,, LTD,
746 - 750 WANGBURAPA BANGKOK
10200 THAILAND
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FAX : +66 2225 8871

HONG KONG

FORWARD INTERNATIONAL CORP.LTD.
15 TH FLOOR, REGENT CENTRE,
88 QUEE'S ROAD, CENTRAL, H. K,
PHONE : +852 521 - 0883
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TAIWAN

PAI- YUING CO,, LTD.
6 TH FL NO, 148 SUNG KIANG ROAD,
TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 (2) 5221304 - 8
FAX : +886 (2) 5630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
NO. I 02 JALAN SS 21/35, DAMANSARA
UTAMA, 47400 PETALING JAYA
SELANGOR DARUL EHSAN,
MA LAYS IA
PHONE : +60 3 - 7184666
FAX : +60 3 - 7173828

JAPAN *Technical*

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神奈川県相模原市相模大野 7 - 35 - 1
営業本部 〒150
東京都渋谷区恵比寿南 1 - 11 - 9

SINGAPORE

FORWARD MARKETING (SINGAPORE) PTE. LTD.
29, LENG KEE ROAD
SINGAPORE 159099,
PHONE : +65 475 - 4555
FAX : +65 475 - 8623

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard NO. 1492.

In case os difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. SPECIFICATION

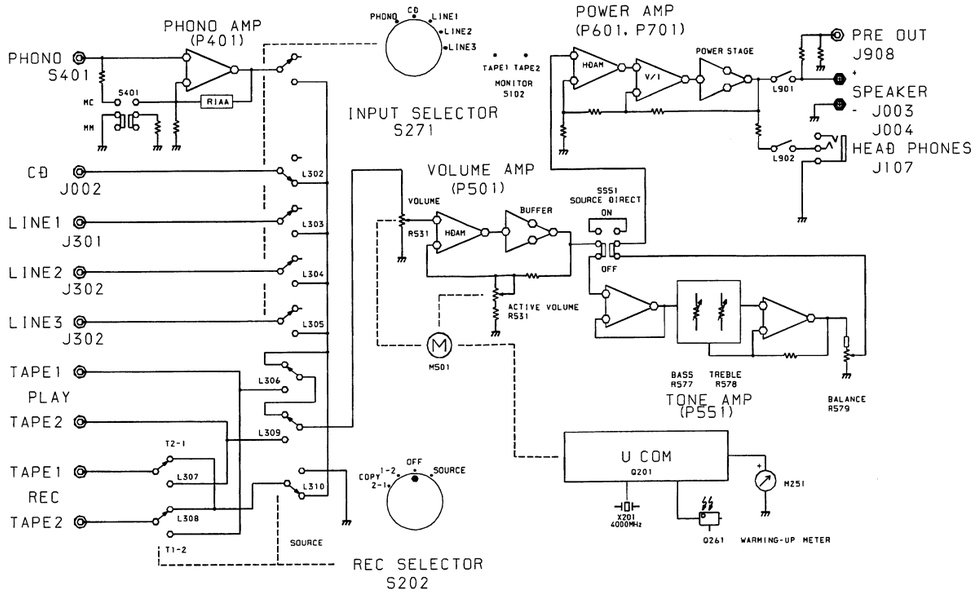
Rated power output (20 Hz to 20 kHz, 2CH simultaneous drive) ..... 60 W x 2 (8 Ω load)
80 W x 2 (6 Ω load)
100 W x 2 (4 Ω load)
Total harmonic distortion (20 Hz to 20 kHz, 2CH drive, 8 Ω load) ..... 0.01 %
Cross-modulation distortion (SMPTE) ..... 0.01 %
Output bandwidth (8 Ω load, 0.04 %) ..... 10 Hz to 50 kHz
Frequency response (CD, SOURCE DIRECT) ..... 5 Hz to 60 kHz, +0/-1 dB
Damping factor (8 Ω load, 20 Hz to 10 kHz) 100
Input sensitivity/input impedance
PHONE (MC) ..... 200 µV/100 Ω
PHONE (MM) ..... 2.5 mV/47 kΩ
HIGH LEVEL ..... 150 mV/10 kΩ
Maximum allowable PHONE input (1 kHz)
MC ..... 17 mV
MM ..... 220 mV
RIAA deviation (20 Hz to 20 kHz) ..... ±0.2 dB
S/N (IHF A network, input shorted)
PHONE (MC) ..... 76 dB
PHONE (MM) ..... 90 dB
HIGH LEVEL ..... 110 dB
Tone control
BASS (100 Hz) ..... ±8 dB
TREBLE (10 kHz) ..... ±8 dB
Supply voltage
/01 version ..... 115/230 V AC, 50/60 Hz
/02 version ..... 230 V AC, 50 Hz
F version ..... 100 V AC, 50/60 Hz
Power consumption ..... 180 W
Dimensions
Width ..... 458 mm
Height ..... 110 mm
Depth ..... 444 mm
Weight ..... 15.0 kg
Accessories
Remote control unit (RC-17PM) ..... x 1
Dimensions
Width ..... 44 mm
Height ..... 239 mm
Depth ..... 17.5 mm
Weight (without batteries) ..... 189 g
SUM-4 (R6/ "AA" size) dry cell battery ..... x 2

Design and specifications are subject to change without notice.

2. TEST EQUIPMENT REQURED FOR SERVICING

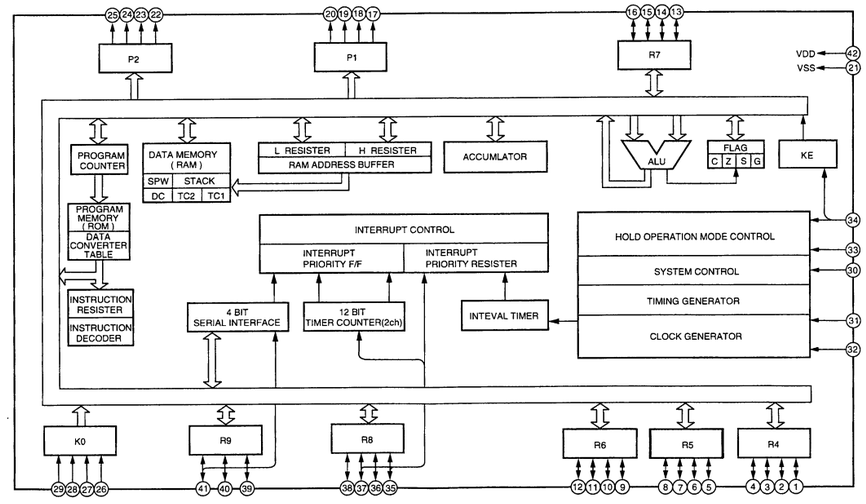
Item 項　　目	Use 使　用　方　法
Distortion Analyzer 歪　　率　　計	Distortion measurements 歪　　の　　測　　定
Audio Oscillator 低 周 波 発 振 器	Sinewave and squarewave signal source 正 弦 波 及 び 矩 形 波 の 信 号 源
AC VTVM A C　　V T V M	Voltage measurements (AC) 交　　流　　電　　圧　　の　　測　　定
Oscilloscope オッシロスコープ	Waveform analysis and trouble shooting and ASO alignment 波計分析、トラブ ルシューティング及び ASO の調整
DC VTVM D C　　V T V M	Voltage measurements (DC) 直　　流　　電　　圧　　の　　測　　定
AC Wattmeter 交流ワットメーター	Monitors primay power to amplifier アンプの一次側消費電圧のモニター
Line Voltmer 電 源 電 圧 計	Monitors poterntial of primay power to amplifier アンプの一次側消費電圧のモニター
Vanable Autotransfomer ス ラ イ ダ ッ ク	Adjust level of primary power to amplifier ア ン プ の 一 次 側 電 圧 の 調 節
Circuit Tester テ　　ス　　タ　　ー	Trouble shooting ト ラ ブ ル シ ュ ー テ ィ ン グ
Shorting Plug ショート用プラグ	Shorts amplifier input to eliminate noise pickup 雑音を拾わないようにアンプ入力を短絡する

3 . BLOCK DIAGRAM



MICROPROCESSOR

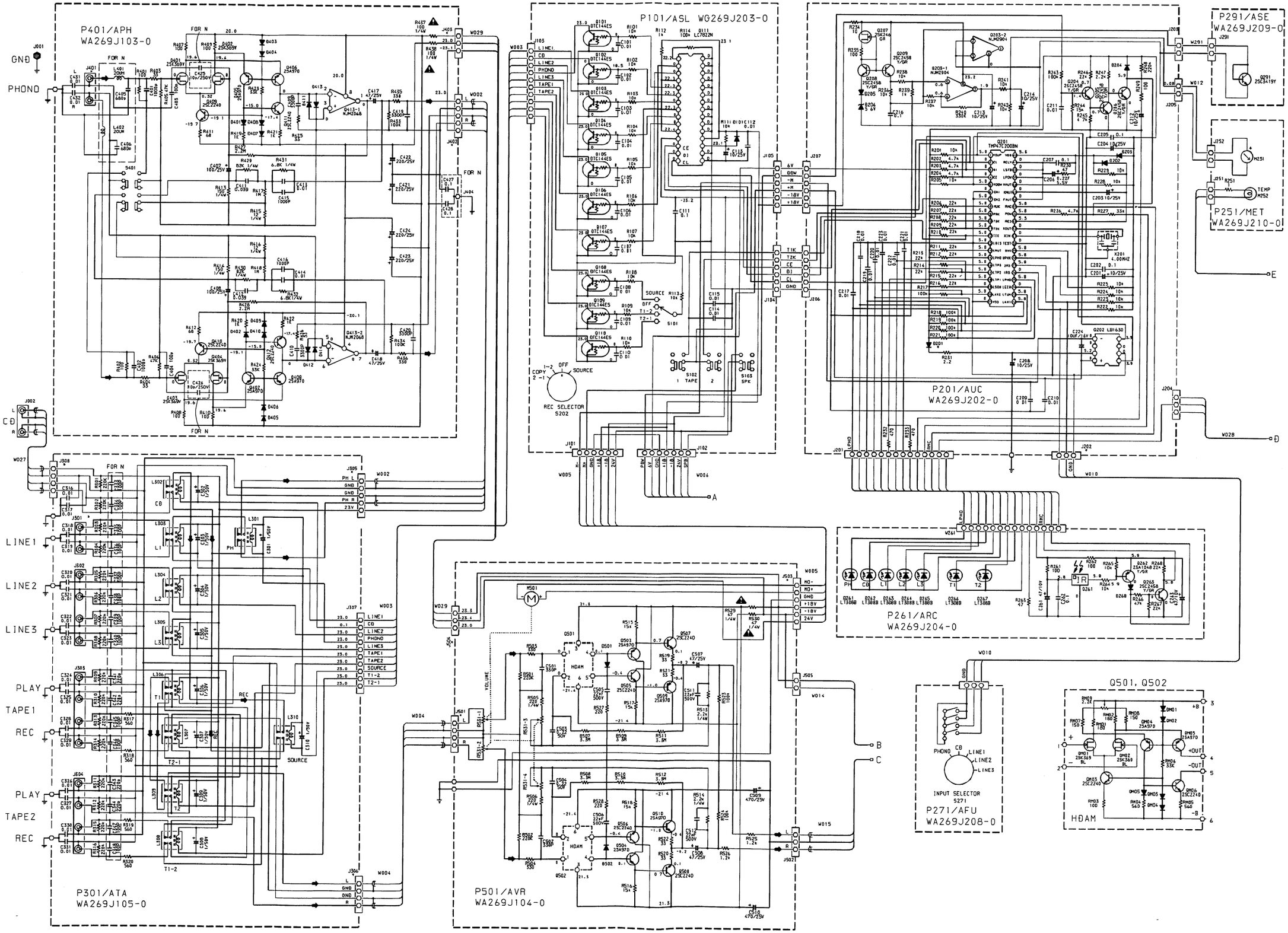
Q201 : TMP47C200BN



PIN NO.	PORT NAME		I/O	ACT	FUNCTION
1	R40	VOUP	O	L	VOLUME CONTROL (UP)
2	R41	CL	O	H	SERIAL OUTPUT (CLOCK)
3	R42	DI	O	H	SERIAL OUTPUT (DATA)
4	R43	CE	O	H	SERIAL OUTPUT (ENABLE)
5	R50	VODW	O	L	VOLUME CONTROL (DOWN)
6	R51	EN1	I	-	MODEL SELECT #1
7	R52	EN2	I	-	MODEL SELECT #2
8	R53	MUK	I	L	KEY INPUT MUTE
9	R60	PRK	I	-	KEY INPUT PROCESSOR
10	R61	T3K	I	L	KEY INPUT TAPE3
11	R62	T2K	I	L	KEY INPUT TAPE2
12	R63	T1K	I	L	KEY INPUT TAPE1
13	R70	LDIS	O	L	LED DISPLAY OTHER
14	R71	LMUT	O	L	LED DISPLAY MUTE
15	R72	LPRO	O	L	LED DISPLAY PROCESSOR
16	R73	LTP3	O	L	LED DISPLAY TAPE3
17	P10	LTP2	O	L	LED DISPLAY TAPE2
18	P11	LTP1	O	L	LED DISPLAY TAPE1
19	P12	LSOU	O	L	LED DISPLAY SOURCE
20	P13	LAX2	O	L	LED DISPLAY AUX2
21	Vss	Vss	-	-	GND.

PIN NO.	PORT NAME		I/O	ACT	FUNCTION
22	P20	LAX1	O	L	LED DISPLAY AUX1
23	P21	LTUN	O	L	LED DISPLAY TUNER
24	P22	LECD	O	L	LED DISPLAY CD
25	P23	LPHO	O	L	LED DISPLAY PHONO
26	K00	1RS	I	L	ROTARY ENCORDER BIT1
27	K01	2RS	I	L	ROTARY ENCORDER BIT2
28	K02	UPK	I	L	SEQUENCE UP
29	K3	DWK	I	L	SEQUENCE DOWN
30	TEST	TEST	-	-	NOT USED (GND.)
31	XIN	XIN	-	-	CLOCK 4.00MHz
32	XOUT	XOUT	-	-	
33	$\overline{\text{RESET}}$	RES	I	L	RESET
34	$\overline{\text{HOLD}}$	PDW	I	L	POWER DOWN CHECK
35	R80	RMC	I	L	REMOTE CONTROL (RC-5)INPUT
36	R81	FMUT	O	L	KMUT + MMUT
37	R82	KMUT	O	L	FUNCTION MUTING
38	R83	MMUT	O	L	MANUAL MUTING
39	R90	LPOW	O	L	LED DISPLAY POWER
40	R91	LSTB	O	L	LED DISPLAY STAND-BY
41	R92	RELY	O	H	STAND-BY RELAY CONTROL
42	VDD	VDD	-	-	POWER SUPPLY +5.4V

4. SCHEMATIC DIAGRAM AND PARTS LOCATION (PATTERN SIDE)



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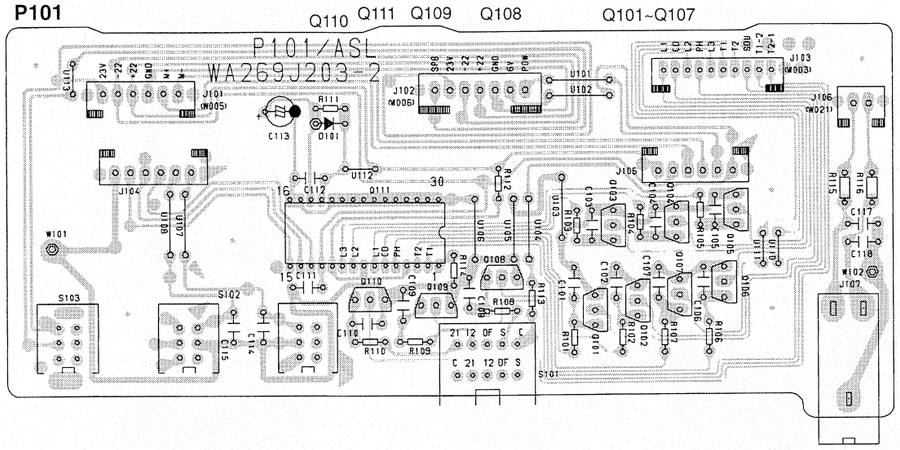

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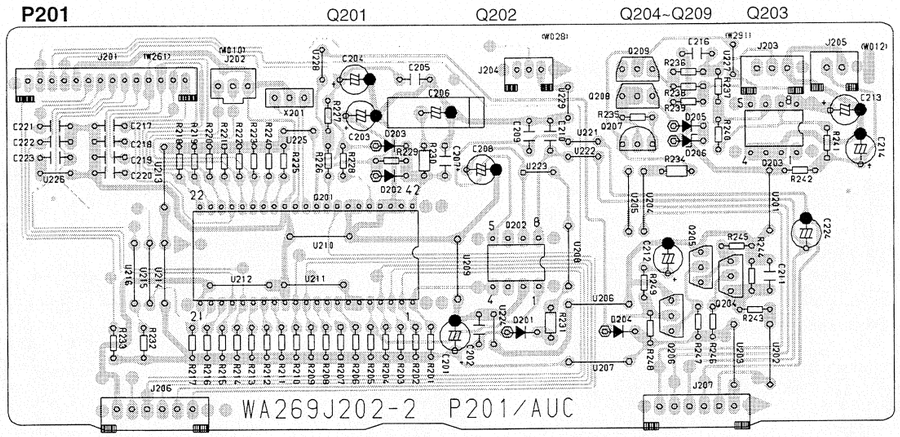

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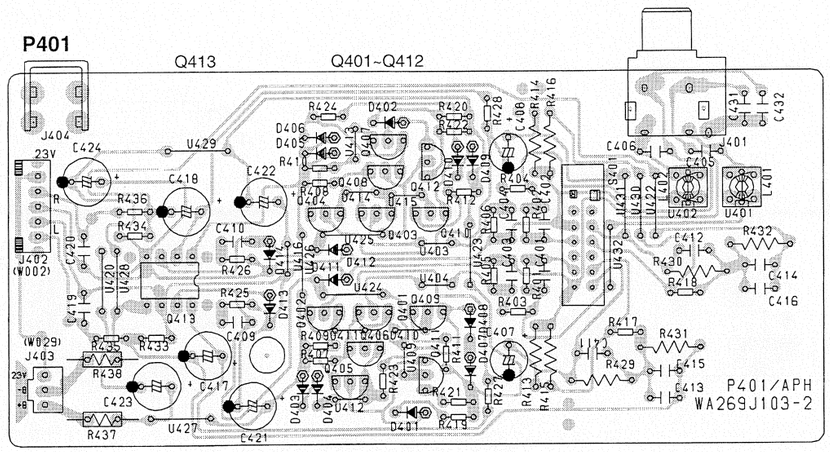
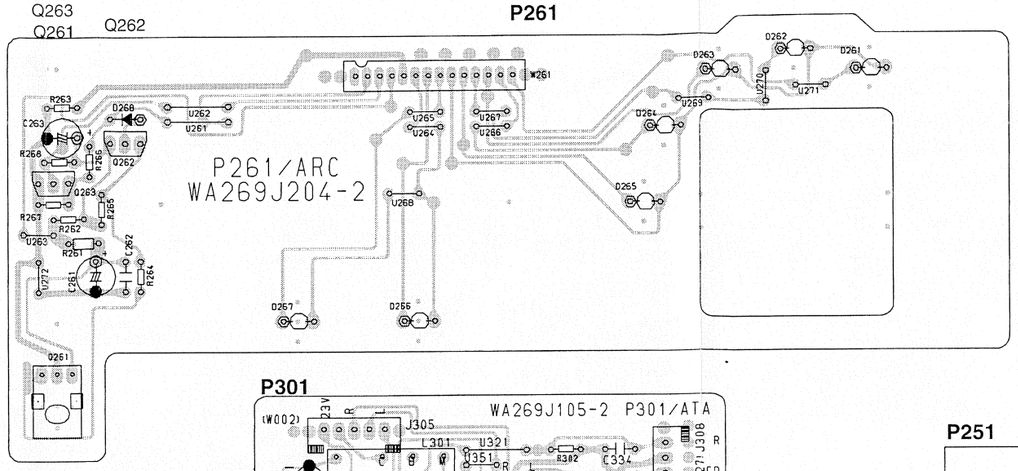
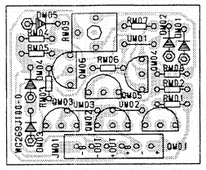


Q263
Q261 Q262

P261



HDAM (Q501, Q502)
QM06, QM05, QM04
QM03, QM02, QM01



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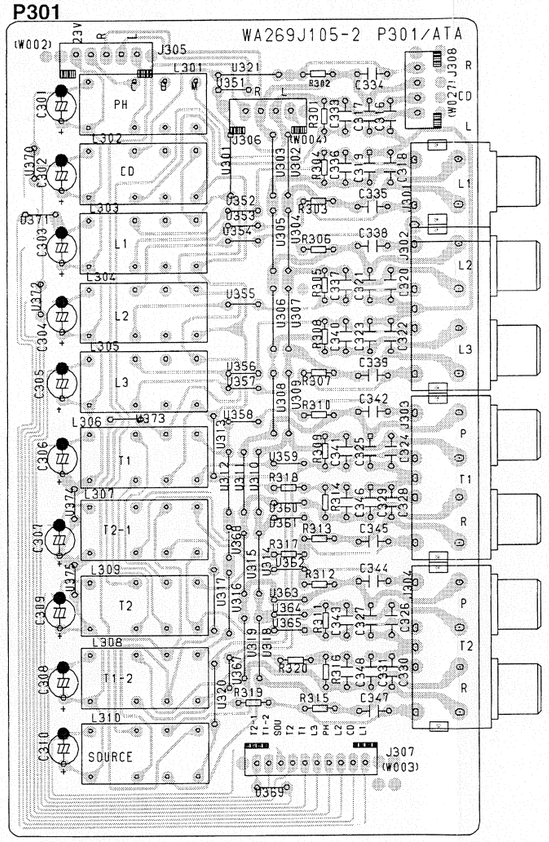

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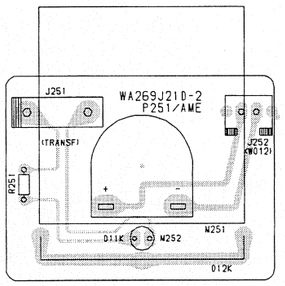

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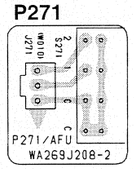

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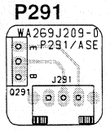

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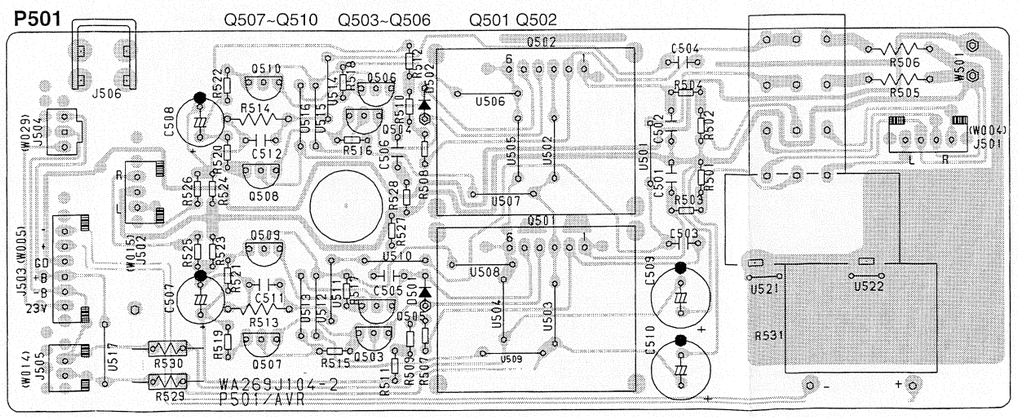

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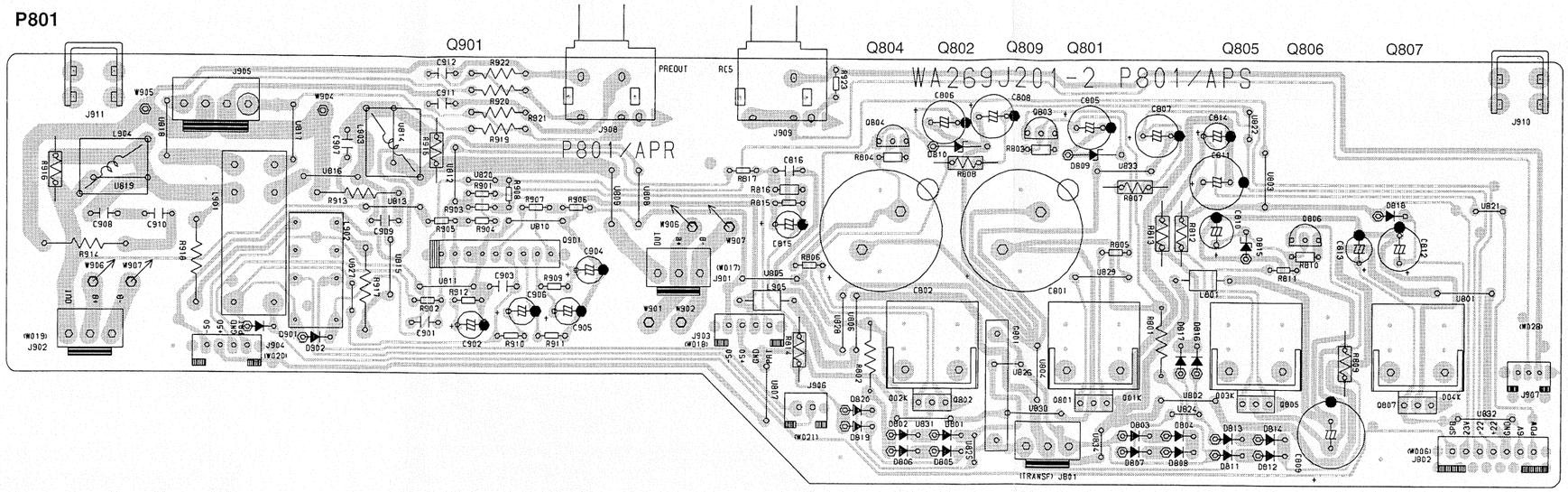

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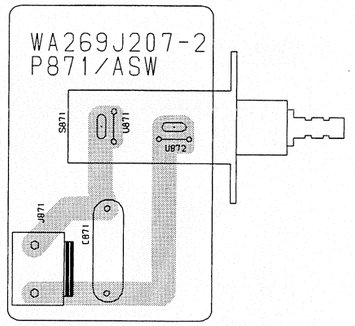
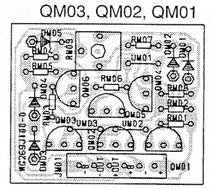


HDAM (Q601, Q701)
QM06, QM05, QM04
QM03, QM02, QM01



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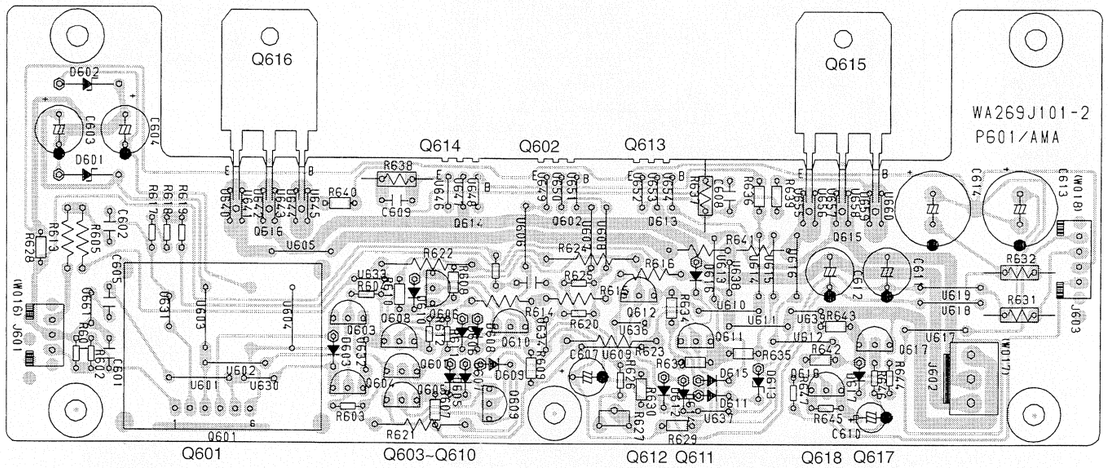

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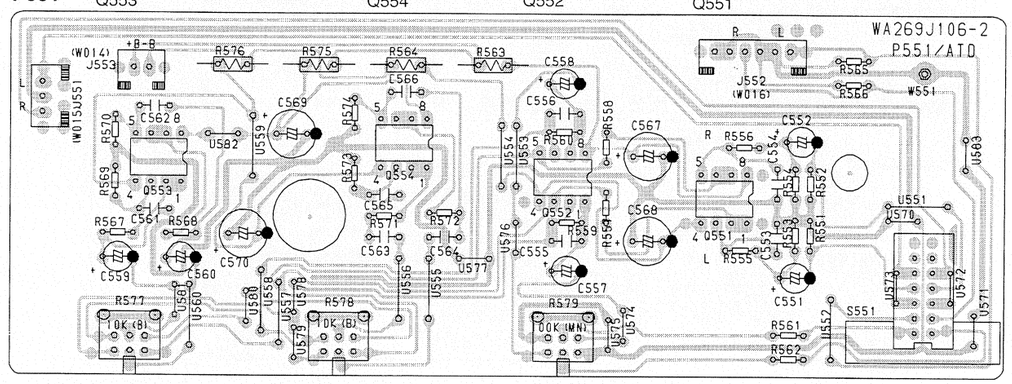

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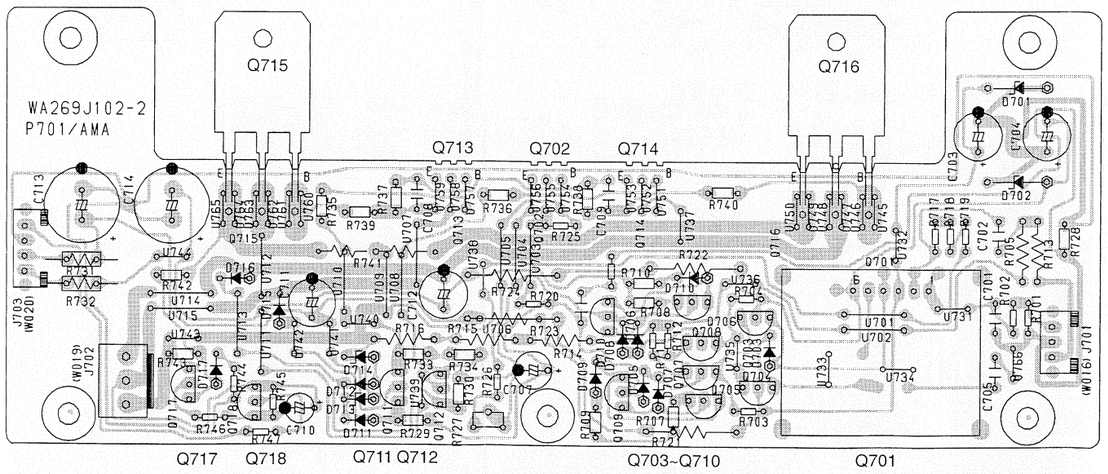

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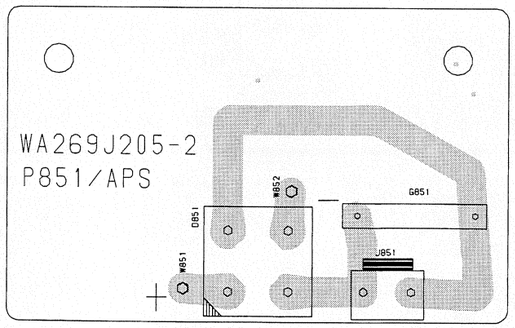

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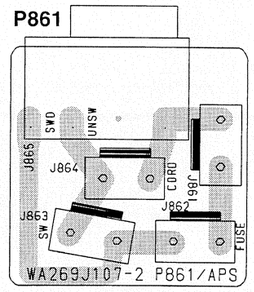

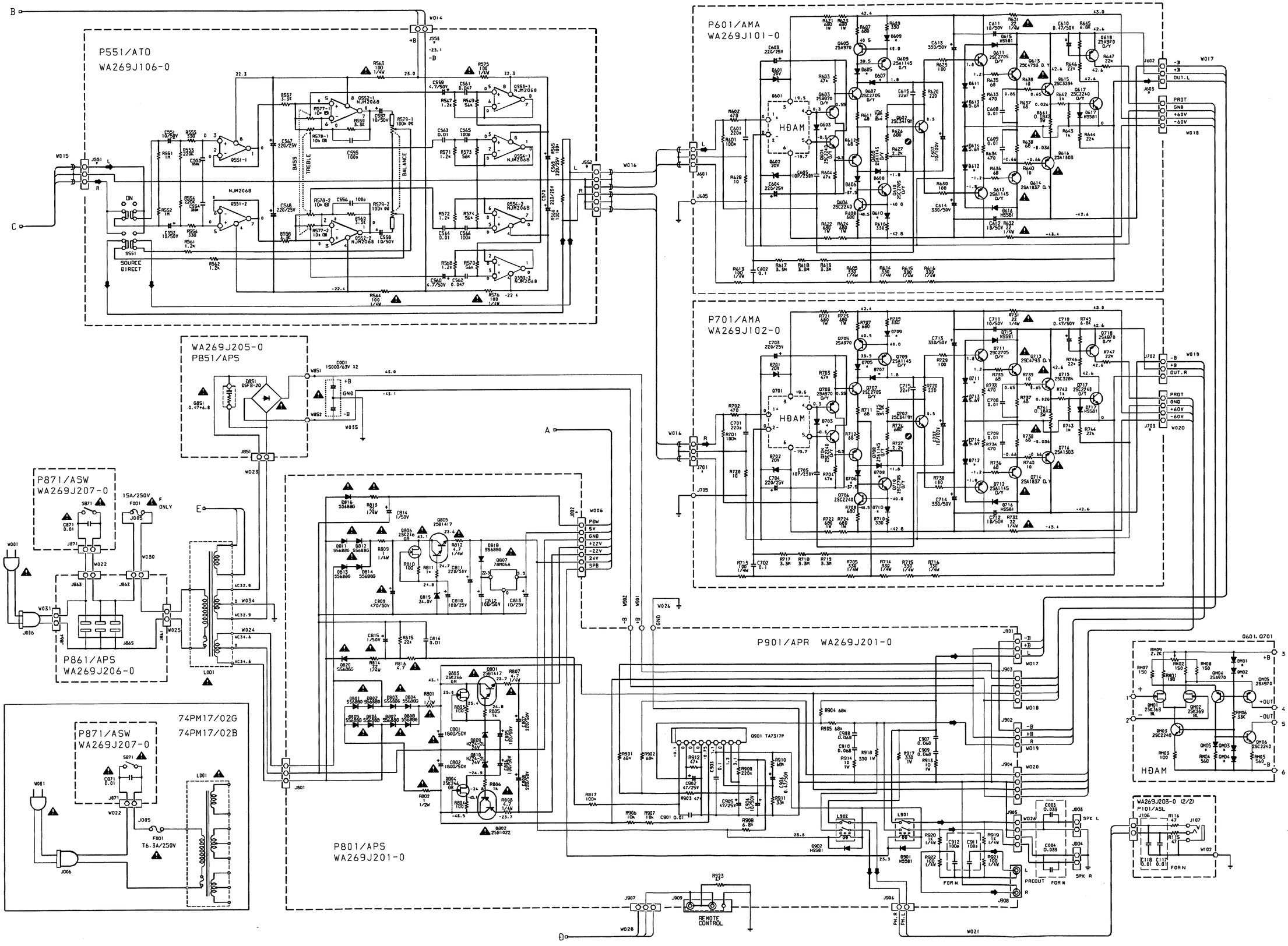
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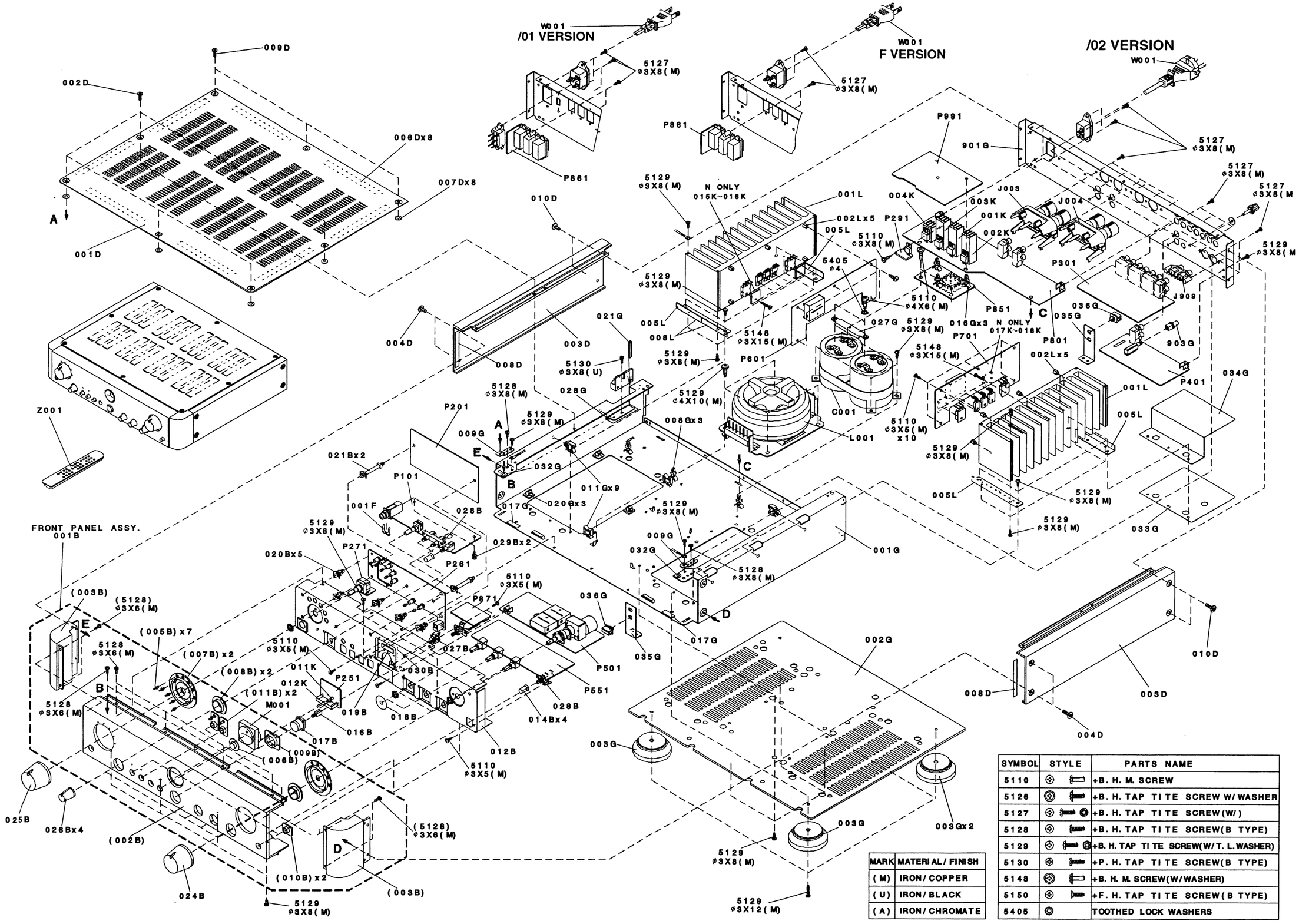
WA269J106-0
P601/AMA
WA269J101-0
P701/AMA
WA269J102-0
WA269J205-0
P851/APS
P871/ASW
WA269J207-0
74PM17/02G
74PM17/02B
P861/APS
WA269J206-0
P801/APS
WA269J201-0
P901/APR WA269J201-0
0601, 0701
HΘAM
WA269J203-0 (2/2)
P101/ASL
REMOTE CONTROL
SOURCE
DIRECT
BASS
TREBLE
BALANCE
Q901 TA7317P
NJM2068
+B
-B
GND
PDW
5V
+22V
-22V
24V
SPB
PROT
OUT.L
OUT.R
SPK L
SPK R
PRECOUT
FORN
PH.R
PH.L

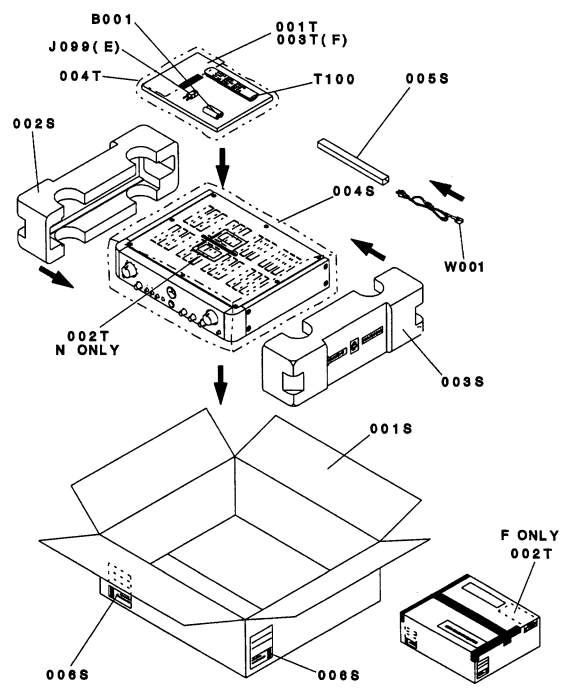
5. EXPLODED VIEW AND PARTS LIST


W001
/01 VERSION
5127 ø3X8(M)
P861
W001
F VERSION
5127 ø3X8(M)
P861
/02 VERSION
W001
5127 ø3X8(M)
009D
002D
006Dx8
007Dx8
001D
A
Z001
010D
004D
003D
008D
021G
5130 ø3X8(U)
5129 ø3X8(M)
N ONLY 015K~018K
001L
002Lx5
005L
008L
5148 ø3X15(M)
5129 ø4X10(M)
P601
C001
L001
027G
5129 ø3X8(M)
016Gx3
N ONLY 017K~018K
P701
P801
P851
P291
004K
003K
001K
002K
J003
J004
J909
P301
5110 ø3X8(M)
5405 ø4
5110 ø4X6(M)
036G
035G
903G
P401
034G
5110 ø3X5(M) x10
002Lx5
001L
005L
033G
P991
901G
5129 ø3X8(M)
5127 ø3X8(M)
5129 ø3X8(M)
5129 ø3X8(M)
5129

(VERS. : VERSION, U : U.S.A., K : FAR EAST, /XX : EUROPE)

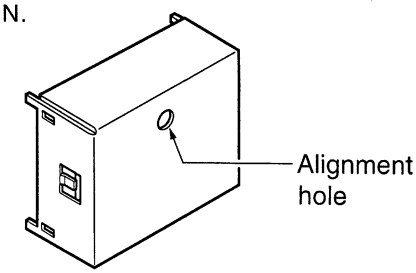
POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
001A			BUSHING,SPK.TERMINAL	227J259010
001B	BLACK		FRONT PANEL,ASSY	269J248500
001B	GOLD		FRONT PANEL,ASSY	269J248510
002B	BLACK	4822 459 04665	FRONT PANEL,	269J248010
002B	GOLD	4822 459 04666	FRONT PANEL,	269J248110
003B	BLACK	4822 426 10496	ESCUTCHEON,	269J063010
003B	GOLD	4822 426 10497	ESCUTCHEON,	269J063110
005B		4822 381 11893	LENS,FOR INPUT SEL/TAPE	269J355010
006B	BLACK	4822 381 11894	LENS,FOR IR SENSOR	256J355020
006B	GOLD	4822 381 11678	LENS,FOR IR SENSOR	256J355010
007B	BLACK		BUSHING,FOR INPUT SEL/MAS VOL	269J259010
007B	GOLD		BUSHING,FOR INPUT SEL/MAS VOL	269J259110
008B	BLACK		BUSHING,FOR BALANCE/REC SEL	269J259020
008B	GOLD		BUSHING,FOR BALANCE/REC SEL	269J259120
009B	GOLD		BUSHING,FOR POWER	269J259130
009B	BLACK		BUSHING,FOR POWER	269J259030
010B	BLACK		BUSHING,FOR S.D/SPEAKER	269J259040
010B	GOLD		BUSHING,FOR S.D/SPEAKER	269J259140
011B	BLACK		BUSHING,FOR TAPE	269J259050
011B	GOLD		BUSHING,FOR TAPE	269J259150
014B	BLACK	4822 410 10227	BUTTON,FOR S.D/TAPE/SPEAKER	144J270110
014B	GOLD	4822 410 63898	BUTTON,FOR S.D/TAPE/SPEAKER	144J270010
016B		4822 404 21012	JOINT,LINK FOR POWER BUTTON	144J270010
017B	BLACK	4822 410 11275	BUTTON,POWER BUTTON	176J270050
017B	GOLD	4822 410 11276	BUTTON,POWER BUTTON	176J270150
024B	BLACK	4822 410 11277	KNOB,FOR MAS.VOL	269J154010
024B	GOLD	4822 410 11278	KNOB,FOR MAS.VOL	269J154110
025B	BLACK	4822 410 11279	KNOB,FOR INPUT.SEL	269J154020
025B	GOLD	4822 410 11281	KNOB,FOR INPUT.SEL	269J154120
026B	BLACK	4822 410 11283	KNOB,FOR BAL/TONE/REC	269J154030
026B	GOLD	4822 410 11284	KNOB,FOR BAL/TONE/REC	269J154130
001D	BLACK	4822 442 01017	LID,TOP	269J257010
001D	GOLD	4822 442 01018	LID,TOP	269J257110
002D	BLACK	4822 502 21693	SCREW,FOR TOP LID	323S010030
002D	GOLD	4822 502 14425	SCREW,FOR TOP LID	323S010020
003D	BLACK	4822 426 10498	SIDE PANEL,	296J249010
003D	GOLD	4822 426 10499	SIDE PANEL,	269J249110
004D	BLACK	4822 502 21693	SCREW,FOR SIDE PANEL FRONT	323S010030
004D	GOLD	4822 502 14425	SCREW,FOR SIDE PANEL FRONT	323S010020
009D	BLACK	4822 502 14461	SCREW,FOR TOP LID REAR PANEL	318K010030
009D	GOLD	4822 502 14462	SCREW,FOR TOP LID REAR PANEL	318K010020
010D	BLACK	4822 502 14461	SCREW,FOR SIDE PANEL REAR PANE	318K010030
010D	GOLD	4822 502 14462	SCREW,FOR SIDE PANEL REAR PANE	318K010020
002G			LID,BOTTOM	269J257020
003G		4822 462 42134	LEG,	291K057010
027G			CONTACTOR,FOR CHEMICON BLOCK	269J123010
903G		4822 410 60343	BUTTON,FOR MM/MC SEL.	058J270030

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
⚠C001		4822 124 12029	ELECT,15000mF 63V AUDIO	EI15906340
C003	/02	4822 121 43006	FILM,0.033mF ±5% 50V	OF15333010
C004	/02	4822 121 43006	FILM,0.033mF ±5% 50V	OF15333010
C401	F	4822 121 42861	FILM,0.001mF ±5% 50V	OF15102010
C427	/02	4822 122 40617	CER.,0.1mF +80 -20% 50V DC	DD38104010
C428	/02	4822 122 40617	CER.,0.1mF +80 -20% 50V DC	DD38104010
⚠F001	/01,F	4822 252 11251	FUSE,15A 250V MITI GAR	FS11500560
⚠F001	/02	4822 070 36302	FUSE,T6.3A 250V BS LISTED	FS10630850
⚠F002	/01	4822 070 36302	FUSE,T6.3A 250V BS	FS10630850
J002		4822 290 81671	TERMINAL,2P RCA PIN GLD T6021	YT02021240
J003	/01,F	4822 265 11015	TERMINAL,SPK. (L) FOR F,E	YT01020330
J003	/02	4822 265 11016	TERMINAL,SPK. (L) FOR N	YT01020350
J004	/01,F	4822 265 11017	TERMINAL,SPK. (R) FOR F,E	YT01020340
J004	/02	4822 265 11018	TERMINAL,SPK. (R) FOR N	YT01020360
⚠J092	/01	4822 272 10269	SLIDE,2-VOLTAGE SELE SDKGA4	SS02021330
⚠L001	/01	4822 146 10829	POWER TRANSF.,FOR E	TS42002030
⚠L001	F		POWER TRANSF.,FOR F	TS42002010
⚠L001	/02	4822 146 10831	POWER TRANSF.,FOR N	TS42002020
L002		4822 526 10691	FERRITE CORE,TFCK-16-8-13	FC50160030
			PACKING	
001S	FB		PACKING CASE,	269J801010
001S	FN		PACKING CASE,	269J801020
001T	/01/02	4822 736 15543	USER MANUAL,PM-17(N)	269J851310
001T	F		USER MANUAL,PM-17(F)	269J851110
002T	F		WARRANTY CARD,JAPAN	9631000220
B001	F		BATTERY,UM-4NEPH/2S	ZF24302000
T100		4822 219 10324	UNIT KIT,IR COMMANDER (RC-17PM)	ZK269J0010
⚠W001	/01,F	4822 321 11337	A.C POWER CORD,AC CORD MITY DC-302-J 125V	ZC01802080
⚠W001	/02		A.C POWER CORD,2P AC CORD 10A 250V CLASS2	ZC01803080



6. DC OFFSET VOLTAGE ALIGNMENT

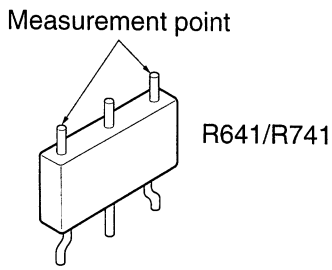
1. Before switching the mains switch. Turn down the master volume to the minimum position and set the balance volume and tone volumes at the center positions. Set variable resistors R627(on the PCB P601:L ch) and R727(on the PCB P701:R ch) fully counterclockwise.
2. Connect the digital voltage meter to the speaker terminal J003(L ch) and J004(R ch). And set the digital voltage meter for the DC position.
3. Turn the mains switch ON. Put thin adjustment screw driver in to the hole of the HDAM (Q601:L ch / Q701:R ch) copper cover. Adjust variable resistors in the HDAM (Q601:L ch / Q701:R ch) value at 0mV ±5mV with in 10 seconds after speaker relay turn ON.



7. IDLING CURRENT ALIGNMENT

REMARK
Before "Idling current alignment", " **DC offset voltage alignment** " have to be done!!

1. Each of cement resistors R641(on the PCB P601:L ch) and R741 (on the PCB P701:R ch) are provided with three test points. Connect the digital voltage meter, set for the DC voltage input, to the test points at the two extremities of three test points of R641 and R741.
2. After the setup above, turn the mains switch ON and heat up the amplifier about 30 minuet.
3. Adjust variable resistors R627(on the PCB P601:L ch) and R727(on the PCB P701:R ch) according to the digital volt meter reading. The target setting value is 18mV(50mA) for both L ch and R ch.



REMARK
The idling current will go down by elapsed time after mains ON. Please refer to the table below.

Elapsed time after Mains ON	Idling current setting value
2 - 4min	40 - 35mV
4 - 10min	35 - 25mV
10 - 20min	25 - 20mV
20 - 30min	20 - 18mV
30 - 60min	18 - 15mV

DC オフセット電圧調整

1. 本体の電源スイッチを入れるまえに、ボリュームを最小に、バランス及びトーンコントロールをセンターに合わせます。P601基板上のR627 (L ch)及びP701基板上のR727 (R ch)の半固定抵抗を半時計回りにしぼりきります。
2. 本体背面のスピーカー端子 (J003 : L ch/J004 : R ch) にデジタルボルトメータを接続します。(レンジはDCに設定する。)
3. HDAM(Q601 : L ch/Q701 : R ch) のカバーにあいた穴に調整用ドライバーをさし込み、中の半固定抵抗を回せるようにします。電源スイッチをオンにし、スピーカーリレーがオンになってから10秒以内に半固定抵抗を回しデジタルボルトメータの値が0mV±5mVになるように調整します。

アイドリング電流調整

【注 意】
アイドリング電流の調整は必ずDCオフセット電圧の調整を終えてから行って下さい。

1. セメント抵抗R641(L ch)、R741(R ch)の上部にある3本の調整用端子のうちの両端の2本にデジタルボルトメーターを接続します。(レンジはDCに設定する。)
2. 電源スイッチをオンにし、アイドリング電流が安定するまで、およそ30分間放置します。
3. P601基板上の半固定抵抗R627(L ch)とP701基板上の半固定抵抗R727(R ch)を時計回りにまわしデジタルボルトメーターの値が18mV±1mV(50mA)になるように調整します。

【注 意】
アイドリング電流は電源投入後の時間の経過につれて下がります。各経過時間時の電流は下記の表を参考にして下さい。

経過時間	アイドリング電流値
2 - 4分後	40 - 35mV
4 - 10分後	35 - 25mV
10 - 20分後	25 - 20mV
20 - 30分後	20 - 18mV
30 - 60分後	18 - 15mV

8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R＊＊＊ : 1) GD05 x x x 140, Carbon film fixed resistor, ±5% 1/4W
R＊＊＊ : 2) GD05 x x x 160, Carbon film fixed resistor, ±5% 1/6W
① Resistance value

Examples ;
① Resistance value

0.1 Ω 001	10 Ω 100	1k Ω .. 102	100k Ω 104
0.5 Ω 005	18 Ω 180	2.7k Ω .. 272	680k Ω 684
1 Ω 010	100 Ω 101	10k Ω .. 103	1M Ω 105
6.8 Ω 068	390 Ω 391	22k Ω .. 223	4.7M Ω 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C＊＊＊ : CERAMIC CAP.
3) DD1 x x x x 370, Ceramic capacitor
Disc type
Temp.coeff. P350~N1000, 50V
③ Capacity value
② Tolerance

Examples
② Tolerance (Capacity deviation)
± 0.25 pF 0
± 0.5 pF 1
± 5 % 5
＊ Tolerance of COMMON PARTS handled here are as follows :
0.5 pF - 5 pF ..... ± 0,25 pF
6 pF - 10 pF ..... ± 0.5 pF
12 pF - 560 pF ... ± 5 %
③ Capacity value

0.5 pF 005	3 pF 030	100 pF 101
1 pF 010	10 pF 100	220 pF 221
1.5 pF 015	47 pF 470	560 pF 561

C＊＊＊ : CERAMIC CAP.
4) DK16 x x x 300, High dielectric constant ceramic capacitor
Disc type
Temp.chara. 2B4, 50V
④ Capacity value

Examples
④ Capacity value

100 pF 101	1000 pF 102	10000 pF 103
470 pF 471	2200 pF 222	

C＊＊＊ : ELECTROLY CAP.(⏚), 6)FILM CAP (⏚)
5) EA x x x x x 10, Electrolytic capacitor
One-way lead type,Tolerance ±20%
⑥ Working voltage
⑤ Capacity value

Examples
⑤ Capacity value

0.1μ F 104	4.7μ F 475	100μ F 107
0.33μ F 334	10μ F 106	330μ F 337
1μ F 105	22μ F 226	1100μ F 118
		2200μ F 228

⑥ Working voltage

6.3 V. . .00625	V. . .025
10 V. . .01035	V. . .035
16 V. . .01650	V. . .050

6) DF15 x x x 350 → Plastic film capacitor
DF15 x x x 310 → One-way type, Mylar ±5% 50V
DF16 x x x 310 → Plastic film capacitor
One-way type, Mylar ±10% 50V
⑦ Capacity value

Examples
⑦ Capacity valu

0.001μ F (1000pF) 102	0.1μ F 104
0.0018μ F 182	0.56μ F 564
0.01μ F 103	1μ F 105
0.015μ F 153	

NOTE:1) The above CODES(R＊＊＊,R＊＊＊,C＊＊＊,C＊＊＊ and C＊＊＊) are omitted on the schematic diagram in some case.
2) On the occasion, be confirmed the common parts on the parts list.
3) Refer to "Common Parts List" for the other common parts**(RI05, DD4, DK4)**.

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows ;
1 . KOA Corporation

Part No.(MJI)	Type No.(KOA)	Description
NH05 x x x 140	→ RF25S x x x x Ω J	(±5% 1/4W)
NH05 x x x 120	→ RF50S x x x x Ω J	(±5% 1/2W)
NH85 x x x 110	→ RF73B2A x x x x Ω J	(±5% 1/10W)
NH95 x x x 140	→ RF73B2E x x x x Ω J	(±5% 1/4W)

＊ Resistance value
Resistance value(0.1 Ω- 10k Ω)

2. Matsushita Electronic Components Co., Ltd

Part No.(MJI)	Type No.(MEC)	Description
NF05 x x x 140	→ ERD-2FCJ x x x	(±5% 1/4W)
RF05 x x x 140		
NF02 x x x 140	→ ERD-2FCG x x x	(±2% 1/4W)
RF02 x x x 140		

＊ Resistance value

Examples :
＊ Resistance value

0.1 Ω 001	10 Ω 100	1k Ω .. 102	100k Ω 104
0.5 Ω 005	18 Ω 180	2.7k Ω .. 272	680k Ω 684
1 Ω 010	100 Ω 101	10k Ω .. 103	1M Ω 105
6.8 Ω 068	390 Ω 391	22k Ω .. 223	4.7M Ω 475

ABBREVIATION AND MARKS

ANT.	: ANTENNA	BATT.	: BATTERY
CAP.	: CAPACITOR	CER.	: CERAMIC
CONN.	: CONNECTING	DIG.	: DIGITAL
HP	: HEADPHONE	MIC.	: MICROPHONE
μ -PRO	: MICROPROCESSOR	REC.	: RECORDING
RES.	: RESISTOR	SPK	: SPEAKER
SW	: SWITCH	TRANSF.	: TRANSFORMER
TRIM.	: TRIMMING	TRS.	: TRANSISTOR
VAR.	: VARIABLE	X 'TAL	: CRYSTAL

NOTE ON SAFETY:

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ⚠ Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意：

⚠ がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

(VERS. : VERSION, U : U.S.A., K : FAR EAST, /XX : EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
			PM01-HDAM CIRCUIT BOARD FOR Q501,Q502,Q601,Q701	
			PM01-RESISTOR	
RM09		4822 100 20681	TRIMMING,2.2KΩ RH0638C14R	RA02220780
			PM01-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES., ±5% 1/6W:RM01-RM08	
			PM01-SEMICONDUCTORS	
DM01				
I		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
DM05				
QM01		4822 130 42839	F.E.T.,2SK369 BL VGDS-40V PD0.4W	HF203691B0
QM02		4822 130 42839	F.E.T.,2SK369 BL VGDS-40V PD0.4W	HF203691B0
QM03		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
QM04		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
QM05		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
QM06		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
			P101-SW & HP CIRCUIT BOARD	
			P101-CAPACITORS	
C101				
I		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C110				
C111		4822 122 40617	CER.,0.1μF +80 -20% 50V DC	DD38104010
C112		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C113		4822 124 41534	ELECT.,10μF ±20% 25V RA2	OA10602520
C114		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C115		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C117	/02	4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C118	/02	4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
			P101-RESISTORS	
R115		4822 052 10479	47Ω ±5% 1/6W	GG05470160
R116		4822 052 10479	47Ω±5% 1/6W	GG05470160
			P101-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES., ±5% 1/6W:R101-R114	
			P101-SEMICONDUCTORS	
D101		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
Q101				
I		4822 130 42594	DIG.TRS.,DTC144ES	BA20012210
Q110				
Q111		4822 209 32553	IC,LC7822N	HC10309030
			P101-MISCELLANEOUS	
S101		4822 273 10337	ROTARY,SRBM14N-F2020	SR02040260
S102		4822 276 13885	PUSH,SPUP24-1-2 2POLES N-LOCK&NS	SP02022280
S103		4822 276 12926	PUSH,SPUP 1KEY 2 POLE	SP02011830
			P201-μ-COM CIRCUIT BOARD	
			P201-CAPACITORS	
C201		4822 124 41534	ELECT.,10μF ±20% 25V RA2	OA10602520
C202		4822 122 40617	CER.,0.1μF +80 -20% 50V DC	DD38104010

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
C203		4822 124 41534	ELECT.,10μF ±20% 25V RA2	OA10602520
C204		4822 124 41534	ELECT.,10μF ±20% 25V RA2	OA10602520
C205		4822 122 40617	CER.,0.1μF +80 -20% 50V DC	DD38104010
C206		4822 124 90406	BIG ELECT,FMOH223ZTP16 SUPER ACITOR	EX22300530
C207		4822 122 40617	CER.,0.1μF +80 -20% 50V DC	DD38104010
C208		4822 124 41534	ELECT.,10μF ±20% 25V RA2	OA10602520
C209				
I		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C211				
C212				
I		4822 124 41534	ELECT.,10μF ±20% 25V RA2	OA10602520
C214				
C216		4822 122 40617	CER.,0.1μF +80 -20% 50V DC	DD38104010
C217				
I		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C223				
C224		4822 124 23112	ELECT,10μF 16V	EQ10601630
			P201-RESISTORS	
R230		4822 052 10479	47Ω ±5% 1/6W	GG05470160
R231		4822 052 10228	2.2Ω ±5% 1/6W	GG05022160
R234		4822 052 10109	10Ω ±5% 1/6W	GG05100160
			P201-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES., ±5% 1/6W:R201-R229,R232, R233,R235-R249	
			P201-SEMICONDUCTORS	
D201				
I		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
D205				
D206		4822 130 33948	ZENER DIODE,5.6V 04AZ5.6-Y, RD5.6ES B2,MTZJ5.6B	HD30561000
Q201		4822 209 31741	MICROPROCESSOR,4BIT 2K 42PIN TMP47C200BN-G928	HU10061050
Q202		4822 209 73287	IC,LB1630	HC10235030
Q203		4822 209 83679	IC,DUAL OP-AMP NJM2904	HC10030090
Q204				
I		4822 130 60839	TRS.,2SC2458 Y OR GR	HT324582B0
Q206				
Q207		4822 130 42835	F.E.T.,2SK246 GR	HF202461C0
Q208		4822 130 60839	TRS.,2SC2458 Y OR GR	HT324582B0
Q209		4822 130 60839	TRS.,2SC2458 Y OR GR	HT324582B0
			P201-MISCELLANEOU	
X201		4822 242 72527	SERAMVIB.,CERALOCK CST4.00MGW	FQ04004030
			P251-METER & LAMP CIRCUIT BOARD	
			P251-RESISTOR	
⚠R251		4822 116 82805	1Ω ±5% 1/6W	GG05010160
			P251-MISCELLANEOUS	
M251		4822 344 14034	D.C METER,MG-28	IM11030030
M252		4822 134 40925	LAMP,8V 100MA	IN10080680
			P261-INDICATOR LED CIRCUIT BOARD	
			P261-CAPACITORS	
C261		4822 124 23563	ELECT,47μF 10V	EG47601050
C262		4822 122 40617	CER.,0.1μF +80 -20% 50V DC	DD38104010

(VERS. : VERSION, U : U.S.A., K : FAR EAST, /XX : EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
C263		4822 124 23563	ELECT,47µF 10V	EG47601050
			P261-RESISTOR	
R261		4822 052 10101	100Ω ±5% 1/6W	GG05101160
			P261-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES., ±5% 1/6W:R262-R268	
			P261-SEMICONDUCTORS	
D261				
|		4822 130 80326	L.E.D.,LT3D8B RED 3O	HI10062320
D267				
D268		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
Q261		4822 130 83519	PHOTO UNIT,IR RECIVER RPM-670CBR	HW10001210
Q262		4822 130 60107	TRS.,2SA1048 Y OR GR	HT110482B0
Q263		4822 130 60839	TRS.,2SC2458 Y OR GR	HT324582B0
			P271-FUNCTION SELECTOR CIRCUIT BOARD	
			P271-RESISTOR	
R271		4822 050 21021	100Ω ±5% 1/4W	GG05101140
			P271-SEMICONDUCTOR	
Q291		4822 130 60117	TRS.,2SC3419 Y	HT334191Y0
			P271-MISCELLANEOUS	
S271		4822 273 20368	ROTARY,SRRS	SR01120070
			P301-INPUT SELECTOR CIRCUIT BOARD	
			P301-CAPACITORS	
C301				
|		4822 124 41543	ELECT.,1µF ±20% 50V RA2	OA10505020
C310				
C316				
|		4822 122 30043	CER.,0.01µF +80% -20% 50V	DK18103310
C331				
C333				
|	/02	4822 121 70543	FILM,100pF ±5% 100V APSV	OF15101540
C348				
			P301-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES., ±5% 1/6W:R301-R320	
			P301-MISCELLANEOUS	
J301		4822 290 81598	TERMINAL,2P RCA JACK YKC21-3255 GOLD	YT02021130
J302				
|		4822 290 81599	TERMINAL,YKC21-3269 GOLD	YT02040970
J304				
L301				
|		4822 280 20501	RELAY,MR62-24SR 24V	LY20240410
L310				
			P401-PHONO AMP CIRCUIT BOARD	
			P401-CAPACITORS	
C401	/01/02		FILM,0.001µF ±5% 100V	OF55102530
C401	F	4822 121 42861	FILM,0.001µF ±5% 50V	OF15102010
C402	/01/02		FILM,0.001µF ±5% 100V	OF55102530

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
C402	F	4822 121 42861	FILM,0.001µF ±5% 50V	OF15102010
C403	/01/02		FILM,100pF ±5% 100V	OF55101530
C403	F		FILM,220pF ±5% 100V APSV	OF15221540
C404	/01/02		FILM,100pF ±5% 100V	OF55101530
C404	F		FILM,220pF ±5% 100V APSV	OF15221540
C405	/02		FILM,680pF ±5% 100V	OF55681530
C406	/02		FILM,680pF ±5% 100V SE	OF55681530
C407		4822 124 41535	ELECT.,100µF ±20% 25V RA2	OA10702520
C408		4822 124 41535	ELECT.,100µF ±20% 25V RA2	OA10702520
C409				
|				
C416		4822 121 42762	FILM,0.0033µF ±5% 50V	OF15332010
C417		4822 124 90058	ELECT.,47µF 25V ARA	OA47602550
C418		4822 124 90058	ELECT.,47µF 25V ARA	OA47602550
C419		4822 121 42762	FILM,0.0033µF ±5% 50V	OF15332010
C420		4822 121 42762	FILM,0.0033µF ±5% 50V	OF15332010
C421				
|		4822 124 90365	ELECT.,220mF ±20% 25V RA2	OA22702520
C424				
C425	/02	4822 123 30088	MICA,10pF ±0.5pF 250V AUDIO	DF31100520
C426	/02	4822 123 30088	MICA,10pF ±0.5pF 250V AUDIO	DF31100520
C431		4822 122 30043	CER.,0.01µF+80% -20% 50V	DK18103310
C432		4822 122 30043	CER.,0.01µF+80% -20% 50V	DK18103310
			P401-RESISTORS	
R413		4822 111 20411	150Ω ±1% 1/4W ERD	NR01151140
R414		4822 111 20411	150Ω ±1% 1/4W ERD	NR01151140
R415		4822 111 20409	12Ω ±1% 1/4W ERD	NR01120140
R416		4822 111 20409	12Ω ±1% 1/4W ERD	NR01120140
R429		4822 111 20418	82KΩ ±1% 1/4W ERD	NR01823140
R430		4822 111 20418	82KΩ ±1% 1/4W ERD	NR01823140
R431		4822 111 20417	6.8KΩ ±1% 1/4W ERD	NR01682140
R432		4822 111 20417	6.8KΩ ±1% 1/4W ERD	NR01682140
⚠R437		4822 050 21021	100Ω ±5% 1/4W	GG05101140
⚠R438		4822 050 21021	100Ω ±5% 1/4W	GG05101140
			P401-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES., ±5% 1/6W:R401-R128, R433-R436	
			P401-SEMICONDUCTORS	
D401				
|		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
D414				
Q401				
|		4822 130 43547	F.E.T.,2SK369 V VGDS-40V PD0.4W	HF203691V0
Q404				
Q405				
|		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
Q408				
Q409				
|		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
Q412				
Q413		4822 209 73064	IC,NJM-2068-DD	HC10053090
			P104-MISCELLANEOUS	
J401		4822 290 81598	TERMINAL,2P RCA JACK YKC21-3255 GOLD	YT02021130
L401	/02	4822 158 60606	CHOKE COIL,22mH 5R200PN	LC12030050
L402	/02	4822 158 60606	CHOKE COIL,22mH 5R200PN	LC12030050

(VERS. : VERSION, U : U.S.A., K : FAR EAST, /XX : EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
S401		4822 276 13409	PUSH,SW SPUP19-4N-W2.0	SP04010660
			P501-MASTER VOL. & AMP CIRCUIT BOARD	
			P501-CAPACITORS	
C501		4822 126 14166	FILM,330pF ±5% 100V APSV	OF15331540
C502		4822 126 14166	FILM,330pF ±5% 100V APSV	OF15331540
C503			FILM,0.22µF ±5% 50V MTFV	OF15224040
C504			FILM,0.22µF ±5% 50V MTFV	OF15224040
C505		4822 123 30089	MICA,22pF ±5%500V FE	DF35220520
C506		4822 123 30089	MICA,22pF ±5% 500V FE	DF35220520
C507		4822 124 90058	ELECT.,47µF 25V ARA	OA47602550
C508		4822 124 90058	ELECT.,47µF 25V ARA	OA47602550
C509		4822 124 23649	ELECT.,470µF 25V ±20% RA2	OA47702520
C510		4822 124 23649	ELECT.,470µF 25V ±20% RA2	OA47702520
C511		4822 123 30089	MICA,22pF ±5% 500V FE	DF35220520
C512		4822 123 30089	MICA,22pF ±5% 500V FE	DF35220520
			P501-RESISTORS	
R505		4822 111 20413	220Ω ±1% 1/4W ERD	NR01221140
R506		4822 111 20413	220Ω ±1% 1/4W ERD	NR01221140
R513		4822 111 20414	2.2KΩ ±1% 1/4W ERD	NR01222140
R514		4822 111 20414	2.2KΩ ±1% 1/4W ERD	NR01222140
R529		4822 052 10479	47Ω ±5% 1/4W	GG05470140
R530		4822 052 10479	47Ω ±5% 1/4W	GG05470140
R531		4822 101 11792	VAR.,1K(B)X2,25K(A)X2	RY02530010
R***			**P501-RESISTORS**(COMMON) CARBON FILM FIXED RES., ±5% 1/6W:R501-R504, R507-R512,R515-R528	
			P501-SEMICONDUCTORS	
D501		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
D502		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
Q501			IC,NEW HDAM TO PM01	KH269J1010
Q502			IC,NEW HDAM TO PM01	KH269J1010
Q503		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
Q504		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
Q505				
I		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
Q508				
Q509		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
Q510		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
			P551-TONE AMP CIRCUIT BOARD	
			P551-CAPACITORS	
C551		4822 124 22571	ELECT.,10µF ±20% 50V RA2	OA10605020
C552		4822 124 22571	ELECT.,10µF ±20% 50V RA2	OA10605020
C553		4822 126 14166	FILM,330pF ±5% 100V APSV	OF15331540
C554		4822 126 14166	FILM,330pF ±5% 100V APSV	OF15331540
C555		4822 121 70543	FILM,100pF ±5% 100V APSV	OF15101540
C556		4822 121 70543	FILM,100pF ±5% 100V APSV	OF15101540
C557		4822 124 22571	ELECT.,10µF ±20% 50V RA2	OA10605020
C558		4822 124 22571	ELECT.,10µF ±20% 50V RA2	OA10605020
C559		4822 124 22274	ELECT.,4.7µF ±20% 50V RA2	OA47505020
C560		4822 124 22274	ELECT.,4.7µF ±20% 50V RA2	OA47505020
C561		4822 121 42764	FILM,0.047µF ±5% 50V	OF15473010
C562		4822 121 42764	FILM,0.047µF ±5% 50V	OF15473010
C563		4822 121 42754	FILM,0.01µF ±5% 50V	OF15103010
C564		4822 121 42754	FILM,0.01µF ±5% 50V	OF15103010

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
C565		4822 121 70543	FILM,100pF ±5% 100V APSV	OF15101540
C566		4822 121 70543	FILM,100pF ±5% 100V APSV	OF15101540
C567				
I		4822 124 90365	ELECT.,220mF±20% 25V RA2	OA22702520
C570				
			P551-RESISTORS	
⚠R563		4822 050 21021	100Ω ±5% 1/4W	GG05101140
⚠R564		4822 050 21021	100Ω ±5% 1/4W	GG05101140
⚠R575		4822 050 21021	100Ω ±5% 1/4W	GG05101140
⚠R576		4822 050 21021	100Ω ±5% 1/4W	GG05101140
R577		4822 101 30735	VAR.,10KΩ X2 (B)	RM01030720
R578		4822 101 30735	VAR.,10KΩX2 (B)	RM01030720
R579		4822 100 30138	VAR.,100KΩ MN FOR BALANCE VOLUME	RM01041310
R***			**P551-RESISTOR**(COMMON) CARBON FILM FIXED RES., ±5% 1/6W:R551-R562, R565-R574	
			P551-SEMICONDUCTORS	
Q551				
I		4822 209 73064	IC,NJM-2068-DD	HC10053090
Q554				
			P551-MISCELLANEOU	
S551		4822 276 13065	PUSH,SPUP24V1A STROK=2MM,NON-SHORT	SP04010650
			P601-POWER AMP L CIRCUIT BOARD	
			P601-CAPACITORS	
C601	/01/02		FILM,220pF ±5% 100V	OF55221530
C601	F	4822 126 14166	FILM,330pF ±5% 100V APSV	OF15331540
C602		4822 121 43022	FILM,0.10µF ±5% 50V	OF15104010
C603	/01/02	4822 124 90051	ELECT.,220µF 25V ARA	OA22702550
C603	F	4822 124 90365	ELECT.,220µF ±20% 25V RA2	OA22702520
C604	/01/02	4822 124 90051	ELECT.,220µF 25V ARA	OA22702550
C604	F	4822 124 90365	ELECT.,220µF 25V ARA	OA22702520
C605		4822 123 30088	MICA,10pF ±0.5pF 500V FE	DF31100520
C607		4822 124 23562	ELECT.,10µF ±20% 100V RA2	OA10610020
C608	/01/02	4822 121 70321	FILM,0.01µF ±5% 100V	OF55103530
C608	F	4822 121 42754	FILM,0.01µF ±5% 50V	OF15103010
C609	/01/02	4822 121 70321	FILM,0.01µF ±5% 100V	OF55103530
C609	F	4822 121 42754	FILM,0.01µF ±5% 50V	OF15103010
C610		4822 124 22273	ELECT.,0.47µF ±20% 50V RA2	OA47405020
C611			ELECT,10µF ±20% 50V RA2BP	EQ10605090
C612			ELECT,10µF ±20% 50V RA2BP	EQ10605090
C613		4822 124 80553	ELECT.,330µF ±20% 50V RA2	OA33705020
C614		4822 124 80553	ELECT.,330µF ±20% 50V RA2	OA33705020
C615		4822 123 30089	MICA,22pF ±5% 500V FE	DF35220520
			P601-RESISTORS	
R605		4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140
⚠R607				
I		4822 052 10681	680Ω ±5% 1/6W	GG05681160
⚠R610				
R613		4822 111 20407	100Ω ±1% 1/4W ERD	NR01101140
R614				
I		4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140
R616				
R621				
I		4822 116 52115	680Ω ±5% 1W	GA05681010
R624				

(VERS. : VERSION, U : U.S.A., K : FAR EAST, /XX : EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
R627		4822 101 30707	TRIMMING,VAR. 2.2KΩ VERT	RA02220760
R628		4822 052 10109	10Ω ±5% 1/6W	GG05100160
R629		4822 052 10101	100Ω ±5% 1/6W	GG05101160
R630		4822 052 10101	100Ω ±5% 1/6W	GG05101160
R631		4822 050 22209	22Ω ±5% 1/4W	GG05220140
R632		4822 050 22209	22Ω ±5% 1/4W	GG05220140
R633		4822 052 10471	470Ω ±5% 1/6W	GG05471160
R634		4822 052 10471	470Ω ±5% 1/6W	GG05471160
R635				
|		4822 050 26809	68Ω ±5% 1/6W	GG05680160
R638				
R639		4822 052 10109	10Ω ±5% 1/6W	GG05100160
R640		4822 052 10109	10Ω ±5% 1/6W	GG05100160
R641		4822 116 82049	0.18ΩX2 3W	BZ10182010
R642		4822 052 10102	1KΩ ±5% 1/6W	GG05102160
R643		4822 052 10102	1KΩ ±5% 1/6W	GG05102160
			P601-RESISTOR(COMMON)	
R***			CARBON FILM FIXED RES., ±5% 1/6W:R01-R604, R611,R612,R617-R620,R625, R626,R644-R647	
			P601-SEMICONDUCTORS	
D601		4822 130 83385	ZENER DIODE,HZ20L-1	HD30020010
D602		4822 130 83385	ZENER DIODE,HZ20L-1	HD30020010
D603		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
D605				
|		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
D612				
D613		4822 130 33948	ZENER DIODE,5.6V 04AZ5.6-Y, RD5.6ES B2,MTZJ5.6B	HD30561000
D614		4822 130 33948	ZENER DIODE,5.6V 04AZ5.6-Y, RD5.6ES B2,MTZJ5.6B	HD30561000
D615				
|		4822 130 80837	DIODE,HSS81TD 150V 150MA	HD20027010
D617				
Q601			IC,NEW HDAM TO PM01	KH269J1010
Q602		4822 130 60117	TRS.,2SC3419 Y	HT334191Y0
Q603		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
Q604		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
Q605		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
Q606		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
Q607		4822 130 43283	TRS.,2SC2705 O OR Y	HT327052A0
Q608		4822 130 42999	TRS.,2SA1145 O OR Y	HT111452A0
Q609		4822 130 42999	TRS.,2SA1145 O OR Y	HT111452A0
Q610		4822 130 43283	TRS.,2SC2705 O OR Y	HT327052A0
Q611		4822 130 43283	TRS.,2SC2705 O OR Y	HT327052A0
Q612		4822 130 42999	TRS.,2SA1145 O OR Y	HT111452A0
⚠Q613		4822 130 63635	TRS.,2SC4793 OY	HT347932A0
⚠Q614		4822 130 63634	TRS.,2SA1837 OY	HT118372A0
⚠Q615		4822 130 60741	TRS.,2SC3284 OPY 125W FMG112	HT332843D0
⚠Q616		4822 130 63674	TRS.,2SA1303 OPY 125W FMG112	HT332843D0
Q617		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
Q618		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
			P701-POWER AMP R CIRCUIT BOARD	
			P701-CAPACITORS	
C701	/01/02		FILM,220pF ±5% 100V	OF55221530
C701	F	4822 126 14166	FILM,330pF ±5% 100V APSV	OF15331540

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
C702		4822 121 43022	FILM,0.10μF ±5% 50V	OF15104010
C703	/01/02	4822 124 90051	ELECT.,220μF 25V ARA	OA22702550
C703	F	4822 124 90365	ELECT.,220μF ±20% 25V RA2	OA22702520
C704	/01/02	4822 124 90051	ELECT.,220μF 25V ARA	OA22702550
C704	F	4822 124 90365	ELECT.,220μF ±20% 25V RA2	OA22702520
C705		4822 123 30088	MICA,10pF ±0.5pF 500V FE	DF31100520
C707		4822 124 23562	ELECT.,10μF ±20% 100V RA2	OA10610020
C708	/01/02	4822 121 70321	FILM,0.01μF ±5% 100V	OF55103530
C708	F	4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C709	/01/02	4822 121 70321	FILM,0.01μF ±5% 100V	OF55103530
C709	F	4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C710		4822 124 22273	ELECT.,0.47μF ±20% 50V RA2	OA47405020
C711			ELECT,10μF ±20% 50V RA2BP	EQ10605090
C712			ELECT,10μF ±20% 50V RA2BP	EQ10605090
C713		4822 124 80553	ELECT.,330μF ±20% 50V RA2	OA33705020
C714		4822 124 80553	ELECT.,330μF ±20% 50V RA2	OA33705020
C715		4822 123 30089	MICA,22pF ±5% 500V FE	DF35220520
			P701-RESISTORS	
R705		4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140
⚠R707		4822 052 10681	680Ω ±5% 1/6W	GG05681160
⚠R708		4822 052 10681	680Ω ±5% 1/6W	GG05681160
⚠R709		4822 111 31001	330Ω ±5% 1/6W	GG05331160
⚠R710		4822 111 31001	330Ω ±5% 1/6W	GG05331160
R713		4822 111 20407	100Ω ±1% 1/4W ERD	NR01101140
R714				
|		4822 111 20416	330Ω ±1% 1/4W ERD	NR01331140
R716				
R721				
|		4822 116 52115	680Ω ±5% 1W	GA05681010
R724				
R727		4822 101 30707	TRIMMING,VAR. 2.2KΩ VERT	RA02220760
R728		4822 052 10109	10Ω ±5% 1/6W	GG05100160
R729		4822 052 10101	100Ω ±5% 1/6W	GG05101160
R730		4822 052 10101	100Ω ±5% 1/6W	GG05101160
⚠R731		4822 050 22209	22Ω ±5% 1/4W	GG05220140
⚠R732		4822 050 22209	22Ω ±5% 1/4W	GG05220140
R733		4822 052 10471	470Ω ±5% 1/6W	GG05471160
R734				
|		4822 050 26809	68Ω ±5% 1/6W	GG05680160
R736				
⚠R737		4822 050 26809	68Ω ±5% 1/6W	GG05680160
⚠R738		4822 050 26809	68Ω ±5% 1/4W	GG05680160
R739		4822 052 10109	10Ω ±5% 1/6W	GG05100160
R740		4822 052 10109	10Ω ±5% 1/6W	GG05100160
⚠R741		4822 116 82049	0.18ΩX2 3W	BZ10182010
R742		4822 052 10102	1KΩ ±5% 1/6W	GG05102160
R743		4822 052 10102	1KΩ ±5% 1/6W	GG05102160
			P601-RESISTORS(COMMON)	
R***			CARBON FILM FIXED RES., ±5% 1/6W:R701-R704,R711, R712-R720,R725,R726, R744-R747	
			P601-SEMICONDUCTORS	
D701		4822 130 83385	ZENER DIODE,HZ20L-1	HD30020010
D702		4822 130 83385	ZENER DIODE,HZ20L-1	HD30020010
D703		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
D705		4822 130 32362	DIODE,1SS176,MA165,1SS254 30V 0.1A	HD20002000
|				
D712				
D713		4822 130 33948	ZENER DIODE,5.6V 04AZ5.6-Y, RD5.6ES B2,MTZJ5.6B	HD30561000

(VERS. : VERSION, U : U.S.A., K : FAR EAST, /XX : EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
D714		4822 130 33948	ZENER DIODE,5.6V 04AZ5.6-Y, RD5.6ES B2,MTZJ5.6B	HD30561000
D715				
I		4822 130 80837	DIODE,HSS81TD 150V 150MA.	HD20027010
D717				
Q701			IC,NEW HDAM TO PM01	KH269J1010
Q702		4822 130 60117	TRS.,2SC3419 Y	HT334191Y0
Q703		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
Q704		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
Q705		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
Q706		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
Q707		4822 130 43283	TRS.,2SC2705 O OR Y	HT327052A0
Q708		4822 130 42999	TRS.,2SA1145 O OR Y	HT111452A0
Q709		4822 130 42999	TRS.,2SA1145 O OR Y	HT111452A0
Q710		4822 130 43283	TRS.,2SC2705 O OR Y	HT327052A0
Q711		4822 130 43283	TRS.,2SC2705 O OR Y	HT327052A0
Q712		4822 130 42999	TRS.,2SA1145 O OR Y	HT111452A0
⚠Q713		4822 130 63635	TRS.,2SC4793 O,Y	HT347932A0
⚠Q714		4822 130 63634	TRS.,2SA1837 O,Y	HT118372A0
⚠Q715		4822 130 60741	TRS.,2SC3284 O,P,Y 125W FMG112	HT332843D0
⚠Q716		4822 130 63674	TRS.,2SA1303 O,P,Y 125W FMG112	HT113033D0
Q717		4822 130 43233	TRS.,2SC2240 GR OR BL	HT322402A0
Q718		4822 130 42949	TRS.,2SA970 GR OR BL	HT109702A0
			P801-POWER SUPPLY & PROTECTOR CIRCUIT BOARD	
			P801-CAPACITORS	
C801			ELECT,1800μF 50V FOR AUDIO	EB18805020
C802			ELECT,1800μF 50V FOR AUDIO	EB18805020
C805		4822 124 90355	ELECT.,100μF ±20% 50V RA2	OA10705020
C806		4822 124 90355	ELECT.,100μF ±20% 50V RA2	OA10705020
C807		4822 124 90366	ELECT.,220μF ±20% 50V RA2	OA22705020
C808		4822 124 90366	ELECT.,220μF ±20% 50V RA2	OA22705020
C809		4822 124 41542	ELECT.,470μF ±20% 50V RA2	OA47705020
C810		4822 124 41535	ELECT.,100μF ±20% 25V RA2	OA10702520
C811		4822 124 90366	ELECT.,220μF ±20% 50V RA2	OA22705020
C812		4822 124 90355	ELECT.,100μF ±20% 50V RA2	OA10705020
C813		4822 124 41534	ELECT.,10μF ±20% 25V RA2	OA10602520
C814		4822 124 41543	ELECT.,1μF ±20% 50V RA2	OA10505020
C815		4822 124 41543	ELECT.,1μF ±20% 50V RA2	OA10505020
C816		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C901		4822 121 42754	FILM,0.01μF ±5% 50V	OF15103010
C902		4822 124 22698	ELECT.,47μF ±20% 25V RA2	OA47602520
C903		4822 122 40617	CER.,0.1μF +80 -20% 50V DC	DD38104010
C904		4822 124 22571	ELECT.,10μF ±20% 50V RA2	OA10605020
C905		4822 124 22698	ELECT.,47μF ±20% 25V RA2	OA47602520
C906		4822 124 22273	ELECT.,0.47μF ±20% 50V RA2	OA47405020
C907				
I		4822 121 43136	FILM,0.068μF ±5% 50V	OF15683010
C910				
C911	/02	4822 121 70543	FILM,100pF ±5% 100V APSV	OF15101540
C912	/02	4822 121 70543	FILM,100pF ±5% 100V APSV	OF15101540
			P801-RESISTORS	
⚠R801		4822 050 21108	1Ω ±5% 1/2W	GG05010120
⚠R802		4822 050 21108	1Ω ±5% 1/2W	GG05010120
⚠R803		4822 052 10101	100Ω ±5% 1/6W	GG05101160
⚠R804		4822 052 10101	100Ω ±5% 1/6W	GG05101160
⚠R807		4822 050 24708	4.7Ω ±5% 1/4W	GG05047140

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
⚠R808		4822 050 24708	4.7Ω ±5% 1/4W	GG05047140
⚠R809		4822 117 10158	1Ω ±5% 1/4W	GG05010140
⚠R810		4822 052 10101	100Ω ±5% 1/6W	GG05101160
⚠R812		4822 050 24708	4.7Ω ±5% 1/4W	GG05047140
⚠R813		4822 113 90119	FUSE,22Ω ±2% 1/4W	NF02220140
⚠R814		4822 113 90119	FUSE,22Ω ±2% 1/4W	NF02220140
⚠R816		4822 052 10478	4.7Ω ±5% 1/6W	GG05047160
R913		4822 053 10109	10Ω ±5% 1W	GA05100010
R914		4822 053 10109	10Ω ±5% 1W	GA05100010
R917		4822 053 10331	330Ω ±5% 1W	GA05331010
R918		4822 053 10331	330Ω ±5% 1W	GA05331010
R919		4822 111 20408	1KΩ ±1% 1/4W ERD	NR01102140
R920		4822 111 20408	1KΩ ±1% 1/4W ERD	NR01102140
R921		4822 111 20407	100.0Ω 1% 1/4W ERDPS2F1000	NR01101140
R922		4822 111 20407	100.0Ω1% 1/4W ERDPS2F1000	NR01101140
			P801-RESISTORS(COMMON)	
R***			CARBON FILM FIXRD RES., ±5% 1/16W:R805,R806,R811, R815,R817,R901-R912-R923	
			P801-SEMICONDUCTORS	
⚠D801				
I		4822 130 80839	DIODE,S5688G VRM=400V IO=1A	HD20029050
⚠D808				
D809		4822 130 33389	ZENER DIODE,HZ24-2L	HD30012010
D810		4822 130 33389	ZENER DIODE,HZ24-2L	
D811		4822 130 80839	DIODE,S5688G VRM=400V IO=1A	HD20029050
D812		4822 130 80839	DIODE,S5688G VRM=400V IO=1A	HD20029050
⚠D813		4822 130 80839	DIODE,S5688G VRM=400V IO=1A	HD20029050
⚠D814		4822 130 80839	DIODE,S5688G VRM=400V IO=1A	HD20029050
D815		4822 130 80116	ZENER DIODE,24V	
⚠D816		4822 130 80839	DIODE,S5688G VRM=400V IO=1A	HD20029050
D818		4822 130 80839	DIODE,S5688G VRM=400V IO=1A	HD20029050
⚠D820		4822 130 80839	DIODE,S5688G VRM=400V IO=1A	HD20029050
D901		4822 130 80837	DIODE,HSS81TD 150V 150MA	HD20027010
D902		4822 130 80837	DIODE,HSS81TD 150V 150MA	HD20027010
⚠Q801		4822 130 63292	TRS.,2SD1417	HT41417100
⚠Q802		4822 130 63291	TRS.,2SB1022	HT21022100
Q803		4822 130 42835	F.E.T.,2SK246 GR	HF202461C0
Q804		4822 130 42835	F.E.T.,2SK246 GR	HF202461C0
⚠Q805		4822 130 63292	TRS.,2SD1417	HT41417100
Q806		4822 130 42835	F.E.T.,2SK246 GR	HF202461C0
⚠Q807		4822 209 62423	IC,NJM78M06FA	HC38506090
Q901		4822 209 83312	TA7317P	HC10042050
			P801-MISCELLANEOUS	
J908		4822 290 81598	TERMINAL,2P RCA JACK YKC21-3255 GOLD	YT02021130
J909		4822 267 41009	TERMINAL,2P RCA PIN JACK	YT02020890
L801		4822 158 60605	FERRITE CORE,BEADS (B-01-RT)	FC90050060

(VERS. : VERSION, U : U.S.A., K : FAR EAST, /XX : EUROPE)

POS. NO.	VERS. COLOR	PART NO. (FOR EUROPE)	DISCRIPTION	PART NO. (FOR U,K)
L901		4822 280 70354	RELAY,VB 24MBU-510 5A/240VAC	LY20240310
L902		4822 280 20501	RELAY,MR62-24SR 24V	LY20240410
L905		4822 158 60605	FERRITE CORE,BEADS (B-01-RT)	FC90050060
			P851-RECTIFIER CIRCUIT BOARD	
			P851-SEMICONDUCTOR	
⚠D851		4822 130 33133	DIODE,D5FB20 200V 5A W/FIN	HE20012290
			P851-MISCELLANEOU	
⚠G851		4822 121 20263	COMP.,0.47μF+6.8Ω NOISE KILLER	BF47400010
			P871-POWER SW CIRCUIT BOARD	
			P871-CAPACITOR	
⚠C871		4822 121 43732	FILM,0.01μF ±20% 250V AC	DF77103500
			P871-MISCELLANEOU	
⚠S871		4822 276 12647	PUSH,ESB-99753V-4 TV-8	SP01011470